

## **Eastern Region, Group E, Needs Flipcharts**

### **Energy Needs**

- Data base of water usage and water quality on a national, state, local level. Many models for this exist such as used for RUS database
  - To include 5-10 prior years data so you can tell trends of water quality increases and decreases and quantity increases and decreases (USGS)
- Standardization of reporting required
- Coordination and centralized at national level
- Financial information about value of water system today
- Information re Cost to produce water
- Optimization: What is resource at hand? What is the demand going forward? What are the cost and other issues?
- Also need modeling: elements from different existing models need to be integrated
- Near-Term: Inventory of existing data integrating energy and water information
- Long-Term: Models to determine trends
  - Implementation using better information
  - integrating energy and water data with economic, social and environmental
- Make data available for planning purposes and make available to the public (on-line interactive tool so that people can plug and play in own #'s to determine what their energy water situation is)
- Efficient use of Resources
- Properly managing demand and increasing supplies
- Other sources of energy
- More life cycle cost impact of existing energy and water management production information (cost benefit)
- Long-term predictions of options for energy and water production
- Pilot project demos based on life-cycle ranking
- Co-producing energy and water
- Benchmark water usage levels and problems in other countries and solutions
- Collaboration between government and private industry is not as it should be
- Be careful not to get stuck in our current paradigm-need to develop different paradigm for solving these problems
- Cost sharing of pilot projects is needed
- Creatively thinking about funding opportunities is needed
- Research and catalog jurisdiction boundaries, authorities and laws in every region on a national and international basis
- Identify constraints and competing authorities
- Licensing issues regarding laws and regulations and other documents including compacts

- Collecting data about ocean resource - work more closely with NOAA to keep data available

## **Water Needs**

- Lack of knowledge of market mechanisms for solving addressing energy water problems(there are markets in the West but don't seem to be any in the East)
- Apply the mechanisms
- Institutional blockages for water market
- Document existing case studies such as Florida and Delaware River Basin
- Increase public and institutional awareness of water/energy nexus issues
- Personal indicator that helps people make the connection between water use and personal water conservation
- Need to know minimal sustainable water resource
- Need criteria for knowing when you are in a drought
- Capture information on how different jurisdictions handle droughts
- Information on prices versus demand
- Research on innovative ways to increase supplies and to manage demand (conservation)
- Explore opportunities to apply demand side management from electrical sector to water sector
- Identify true cost of water from electricity
- New technology for post-use water treatment
- Other energy sources that would be considered off grid (cost competitive)
- Study demand and energy use of electricity required to get water to end users and how manipulation of water use can result in positive (less use, efficient) use of water
- Identify best practices to mitigate degradation problems
- Interface with EPA on "what is water quality?"
- Do we know what and how much quality is needed for different intended usages?
- What is the cost benefit of increased water quality?
- Document and identify technologies that allow matching of water quality with intended use.
- Look at best practices outside of US
- Benchmark water quality and its cost to provide the associated water quality.

## Solutions

- Develop comprehensive model for life-cycle costs and benchmark that includes historical data, projections and other information (water usage/quality; financial information about value of water system today; information re Cost to produce water; optimization: What is resource at hand? What is the demand going forward? What are the cost and other issues?)
  - Develop data necessary to perform life-cycle analysis
  - Validate model with regional benchmark data
  - Establish ranked priority of technologies with management for processing water and or energy
  - Making model interactive on the web
  - Create a database and catalog all jurisdictional authorities, permits, regulations, ( and permissions granted) that pertain to water
- Develop and rank other promising technologies to increase supplies, including international sources or manage demand
- Develop pilot projects
  - Cost shared basis
  - Water and energy efficient use projects
  - low water power production
  - desalination
  - renewables
- Explore benefit of applying market mechanisms to address conflicts between water uses for energy production and other competing uses
- Establish outreach to the public regarding water issues
  - Create water-energy consumption calculator that is readily available on the web
  - Calculator to be consumer based household level
- Creation of start-up programs to encourage entrepreneurial activities
- Identify and promote projects that encourage symbiotic water/energy production conservation, including international sources
- Create and/or identify new funding sources for implementing large scale projects
- Develop water quality needs for specific needs applications and cost benefit analysis and cascading issues.